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[Redacted]

7 June 1971

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MEMORANDUM FOR: Chief, Technical Services Group, NPIC

ATTENTION : Chief, PPS/TSG

SUBJECT : RED Monthly Report (May 1971)

Significant Items of Interest for May 1971:

1. Wide-Field, High-Power, Anamorphic Stereoviewer [Redacted]  
Still in a "stop Work" condition pending resolution of questions concerning costs to complete.

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3. Target Indexing Device - Undergoing T&E. It is considered to be ready for operational evaluation which must, of course, await arrival of the first mission material. A maintenance contract has been negotiated [Redacted]

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4. Image Comparison Microstereoscope [Redacted] In final stages of assembly and check-out. Predelivery inspection is scheduled for late June or early July. It should be delivered in July.

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5. Lenticular Rear Projection Screen [Redacted] The program for development of a large lenticular screen is in the first phase of removing the deleterious color fringing. No problems are anticipated.

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6. Viewing Systems Handbook [Redacted] Volume I is in final edit and will soon go to the printer. Delivery is scheduled for late June.

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7. High Precision Stereo Comparator (HPSC) - The installation of the HPSC in the Center has fallen three weeks behind schedule. This was caused by unforeseen difficulties encountered in the site preparation and not by assembly problems.

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8. [Redacted] Light Tables - The delivery of these tables to the Center is on schedule. Approximately 230 tables have been delivered to the Center through the end of May.

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9. Preliminary Design for a Step-and-Repeat Printer - The final report for this project has been received and distributed to interested parties within the Center. A proposal to fabricate a Step-and-Repeat Printer has also been received and evaluated.

10. 10" by 10" Stage Comparator [ ] reports that this project is progressing on schedule. This comparator is expected to be ready for preacceptance tests at the contractor's facility during the latter part of June.

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11. Dry Silver Materials Development Program - A pilot plant coating of positive-acting material was conducted to attempt to duplicate the results of the previous laboratory coatings. The resolution achieved was: low contrast - 80 l/mm; high contrast - 114 l/mm. Future work will be directed toward improving the resolution to that which was achieved in the laboratory: low contrast - 102 l/mm; high contrast - 182 l/mm.

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12. P.I. Scan and Search Station [ ] Project Manager visited [ ] the optics subcontractor. A new cooling system for the light source has been designed which will avoid the use of liquid cooling. The optical system is expected to be ready for acceptance tests by [ ] during the latter part of June.

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13. Roomlight Enlarger/Viewer/Printer - This instrument passed the preacceptance tests [ ] and has been installed in the Center, where it is being tested and evaluated. This instrument uses dry silver paper and produces an enlargement at selected magnifications (3, 8, 13, 15) in less than a minute.

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14. Experimental Calibration Device for the HPSC. - This item, which was fabricated [ ] was delivered to ESD/TEB [ ] [ ] briefed TEB and PHD on the operation of the device. Preliminary investigation and measurements were made in regard to adapting this device to other comparators.

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15. Light Table Vibration Analysis - The initial modifications to a [ ] table will be completed the last week of May. This modification results from altering the optics mount and carriage beam. [ ] has requested that the completion date be extended to 15 July 1971.

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16. UV Rear Projection Viewer - This viewer has been delivered [ ] It is being installed in the local [ ] plant for evaluation by NPIC and contractor personnel.

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17. P.I. Printout Station [redacted] has started work on this new project to modify a GPE [redacted] table to handle [redacted] dry-processed photo materials. The only component that will be retained in the redesign is the basic [redacted] light table itself.

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18. Fabrication of a Step-and-Repeat Printer - The briefings and the project approval request have been completed on this proposed project. This project has been deferred until FY-72.

19. New Projects under Contract:

a. High Intensity Tracking Light Source [redacted]

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b. Optical Equipment Test Kit [redacted]

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c. UV Viewer Evaluation [redacted]

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d. Research in Mensuration Instruments [redacted]

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e. Micro-D Measurements Analysis [redacted]

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20. [redacted] Processor - This color sensitometric processor was received and installed. It is being readied for precision processing tests.

[redacted]

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22. Residual imagery tests on film chopped and treated (stripped) for silver recovery [redacted] gave [redacted] samples of stripped film produced [redacted] these films were tested for residual imagery. No residual imagery was discovered.

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23. Color Gamut Statistical Validation Preliminary Results - Samples of 91 patches of [redacted] photography were measured on the Color Eye Colorimeter. These measurements were compared to C.I.E. values produced using the color densitometer and the Color Gamut technique. Using the [redacted] difference of 18 units was produced on the average between the Color Eye and Color Gamut techniques. The data indicates that this difference could be reduced by modifying the Color Gamut produced brightness value. These results are preliminary in nature.

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24. Optical Power Spectrum (OPS) as a Measure of Image Quality - Phase II - Preliminary results from new test imagery indicate the OPS technique (using the T.I.D.) gives higher correlation values than those obtained with the prototype equipment used for the Phase I tests. Phase II remains on schedule. A comprehensive final report will be published in July 1971.

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26. Calibrated Color Test Image [ ] - This project will be completed in June 1971. It will provide a series (67 rolls) of calibrated color images [ ] with controlled variation in exposure, color balance, focus, and haze. This imagery will be used for preliminary optical power spectrum tests in support of the [ ] contract, and as reference images in subjective color quality experiments.

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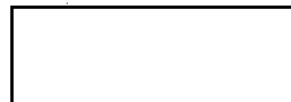
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27. FY-72 Imagery Interpretation Research Program Development - RED personnel have generated a tentative program for the FY-72 human factors research activities [ ] Extensive discussions have been held with representatives from the OD/IEG. A proposal is expected during the first week in June, with proposal evaluation scheduled for completion within two weeks thereafter.

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29. Contract Activity:

a. Unconventional Film Evaluation [redacted] -  
This PAR was approved by D/NPIC, and negotiations  
[redacted] have been completed.

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b. Color Equipment Investigation Program [redacted]  
[redacted]  
[redacted] par-

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icipated in the Contract negotiations.

c. Optical Image Manipulation [redacted] The final  
report has been received, reviewed, and returned for  
corrections. The new report will be ready approxi-  
mately 3 June. A new technique for image manipulation  
is being implemented for the in-house work. The FY-71  
contract went into effect 20 April.

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d. Color Standards - Microdensitometer Calibration [redacted]  
[redacted] All targets have been produced and delivered.  
The Quality Control Manual and the final report will  
be submitted within 15 days of contract completion.  
There will be no overruns or further extensions.

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30. Evaluations:

a. Emulsion Evaluation Support - HFS/ATB personnel and  
[redacted] continued their support to APSD  
and IEG in their programs to evaluate the effect of  
various black-and-white dupe stocks on PI performance.  
The last emulsion has been delivered (following an  
extended delay), and the PI evaluation is scheduled  
to begin 8 July. Data collection on this phase should  
be completed within five days.

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b. Evaluation of Technical Documents [redacted]  
[redacted] Replies have been received from an inde-  
pendent consultant, IEG, PSG, and TSG to an HFS/ATB  
request for an evaluation of draft copies of "A  
Recommended Color Vocabulary for Use in the Exploitation  
of Color Imagery" and "A Glossary for Color Aerial  
Reconnaissance." The replies were largely favorable  
and, in those instances where problems exist [redacted] per-  
sonnel will visit the Center and seek a solution to them.

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31. [redacted] participated in Color Task Force meetings and activities concerning the "Color Symposium" given [redacted] on 25-26 May. He also coordinated various requests/actions from the following:

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a. [redacted] call regarding [redacted] exposure.

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b. NPIC visit by six officers from AFSSO TAC (Col. [redacted])

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d. Final report [redacted] for SPS/DDS&T project.

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e. Request by [redacted] (NASA) regarding current operational collection systems.

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f. Visit to Goddard regarding NASA OAO Program. Col. [redacted] (NASA) is contact; visit to be sometime in June.

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32. [redacted] was active attending meetings in the following areas:

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a. [redacted]  
b. [redacted]

c. MC&GWG and ARGO meetings.

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33. During this reporting period [redacted] participated in various [redacted] activities.

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34. Meetings, Briefings, etc.:

a. On 19 May, Chief, Advanced Technology Branch, briefed five photo interpreters [redacted]

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b. On 20, 21 May [redacted] attended meetings of the Vision Committee of the National Research Council of the National Academy of Sciences on color vision at the NAS Headquarters, Washington, D.C.

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- c. On 26 May [ ] presented the NPIC Color R&D Program and the in-house work on color gamut to the DIA Color Symposium at the Institute of Defense Analysis.

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- d. [ ] briefed the AFSPPF staff on the status of the OPS Image Quality Project on 28 May 1971.

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e. [ ]

- f. HFS/ATB personnel briefed TSG and Center management on the impact of the "Softlens" on the Center's proposed contact lens program.

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- g. [ ] attended the Symposium for Information Display in Philadelphia, Pa., on 4-5 May.

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- h. [ ] attended the Spring Joint Computer Conference in Atlantic City, N.J., during 18-20 May.

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- i. [ ] chaired a meeting of the Dry Silver Coordinating Committee on 17 May.

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- j. [ ] attended the MC&G Color Symposium on 25 and 26 May 1971.

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- k. [ ] attended the Agency Management Grid Course from 24 through 28 May 1971.

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- l. [ ] demonstrated the [ ] Image Shearing Device to the various components within NPIC. This is a device for making accurate measurements of small objects. IEG/PHD, IAS, and TSG/APSD have expressed interest in evaluating the instrument.

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- m. RED sponsored a meeting in which Control Environment Systems demonstrated a spectrally controlled light table. IEG has expressed interest in evaluating this concept with operational imagery.

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- n. [redacted] escorted a group from NPIC to the [redacted] plant on 19 May 1971 to view the film destruction and silver recovery unit in operation. This is the unit that was formerly located in NPIC.

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- o. [redacted] briefed the PI Course for contractor personnel on new developments in dry silver materials on 26 May 1971.

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[redacted]  
Acting Chief,  
Research & Engineering Division,  
TSG/NPIC